REMARKS

Status of the claims:

With the above amendments, claims 1-4 have been amended. Claims 1-4 are pending and ready for further action on the merits. No new matter has been added by way of the above amendments. Reconsideration is respectfully requested in light of the following remarks.

Claim Objections

Claim 3 has been objected to for reciting "novel material developed by the inventors". The Examiner asserts that this phrase should be removed. Claim 3 has been amended accordingly. Withdrawal of the objection is warranted and respectfully requested.

Rejections under 35 USC §101

Claim 1 has been rejected under 35 USC §101 as not being a statutorily recognized class of claims in US Patent practice. Claim 1 has been amended to recite a "method of use" claim. Applicants believe that with this amendment that the rejection has been obviated. Withdrawal of the rejection is warranted and respectfully requested.

Rejections under 35 USC §112, first paragraph

Claim 1 has also been rejected under 35 USC §112, first paragraph as not being enabled. The Examiner asserts that the specification does not provide enablement for the prevention of arthritis, osteoporosis and ruptured disc. Applicants have amended claim 1 so that it no longer recites "the prevention of arthritis, osteoporosis and ruptured disc". Applicants believe that with this amendment that the rejection has been obviated. Withdrawal of the rejection is warranted and respectfully requested.

Rejections under 35 USC §112, first paragraph

Claims 1-4 have been rejected under 35 USC §112, second paragraph as being indefinite. The Examiner asserts that the claims do not enumerate specific steps for using the compound in the claims. The claims have been amended to recite specific steps. It is believed that with these amendments that the rejection has been obviated. Withdrawal of the rejection is warranted and respectfully requested.

Claims 1-4 are rejected for having a dashed line in the formula. Applicants assert that one of skill in the art would recognize that this is a methyl group that is behind the plane of the bicyclic moiety. As such, there is nothing vague or

indefinite about this drawing. Withdrawal of the rejection is warranted and respectfully requested.

The Examiner asserts that it is unknown what is meant by "Glc". "Glc" refers to glucose. Applicants submit that with this explanation, "Glc" is no longer vague or indefinite. Withdrawal of the rejection is warranted and respectfully requested.

The Examiner asserts that claim 4 is unclear. The Examiner has suggested an alternative way to claim the process. However, Applicants believe that the instantly amended claim is clear and thus, the rejection has been obviated. Withdrawal of the rejection is respectfully requested.

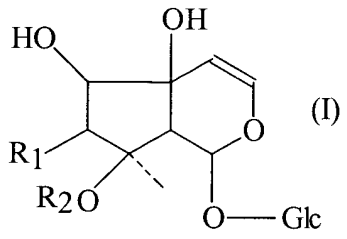
Rejections under 35 USC §103

Claims 1-4 have been rejected under 35 USC §103(a) as being unpatentable over Chrubasik et al. (Chrubasik et al., The Pain Clinic, Vol. 11, No. 3, pp. 171-178, 1999) in combination with Recio et al. (Recio et al., Plant Medica, Vo. 60, No. 3, pp. 232-234, 1994), Stumpf '737 (US Patent No. 6,280,737), Wheatley '919 (GB 2335919), and Kikuchi et al. (Kikuchi et al., Chem. Pharm. Bull., Vol. 31 No. 7, pp. 2296-2301, 1983).

This rejection is traversed for the following reasons.

Present Invention

The present invention as recited in claim 1 relates to a method of treating arthritis, osteoporosis and ruptured disc comprising administering to a patient in need thereof a pharmaceutically acceptable amount of the compound of formula (I):



in which

R1 represents a hydrogen atom or an alkyl group; and

R2 represents a hydrogen atom; along with a pharmaceutically accpetable adjuvant. As recited in claims 2-4 the present invention also relates to a pharmaceutical preparation containing the above compounds and a process for preparing them.

Disclosure of Chrubasik et al.

Chrubasik et al. disclose the use of harpagoside for osteoarthritis on page 174.

Chrubasik et al. fail to disclose the use of harpagide for osteoarthritis.

Disclosure of Stumpf '737

Stumpf '737 discloses using a 5% harpagoside solution for treatment of arthritis

Stumpf '737 fails to disclose the use of harpagide for osteoarthritis.

Disclosure of Wheatley '919

Wheatley '919 discloses tablets containing harpagoside for treating inflammatory conditions.

Wheatley '919 fails to disclose the use of harpagide for osteoarthritis.

Disclosure of Kikuchi et al.

Kikuchi et al. disclose the hydrolysis of a compound that is similar to harpagoside except that a coumaroyl group is hydrolyzed instead of a cinnamoyl group.

Kikuchi et al. fail discloses the use of harpagide for osteoarthritis.

Removal of the Rejection over Recio et al. Stumpf '737, Wheatley '919, and Kikuchi et al.

Applicants point out that the compound of general formula (1) in the instant application wherein R_1 is methyl and R_2 is hydrogen is a compound that is known as harpagide. None of the

references disclose or suggest the use of harpagide for treating arthritis.

Accordingly, Applicants assert that the Examiner has failed to make out a *prima facie* case of obviousness with regard to the 35 USC §103(a) rejection over Recio et al. Stumpf '737, Wheatley '919, and Kikuchi et al. Three criteria must be met to make out a *prima facie* case of obviousness.

1) There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.
2) There must be a reasonable expectation of success.
3) The prior art reference (or references when combined) must teach or suggest all the claim limitations.

See MPEP §2142 and *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991). In particular, the Examiner has failed to meet the third element to make a *prima facie* obviousness rejection. None of the cited references disclose or suggest the use of harpagide for treating arthritis. For this reason alone, Applicants assert that the rejection is inapposite. Withdrawal of the rejection is warranted and respectfully requested.

Moreover, Recio et al. Stumpf '737, Wheatley '919, and Kikuchi et al. teach 8-O-(p-coumaroyl)-harpogide. In contrast, the instant invention has no p-coumaroyl group at the 8-oxy

position (i.e., R_2). Thus, the references neither disclose nor suggest the instant invention. Withdrawal of the rejection is warranted and respectfully requested.

With the above remarks and amendments, it is believed that the claims, as they now stand, define patentable subject matter such that a passage of the instant invention to allowance is warranted. A Notice to that effect is earnestly solicited.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a three (3) month extension of time for filing a reply in connection with the present application, and the required fee of $465.00 is attached hereto.

If any questions remain regarding the above matters, please contact Applicant's representative, T. Benjamin Schroeder (Reg. No. 50,990), in the Washington metropolitan area at the phone number listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By _____

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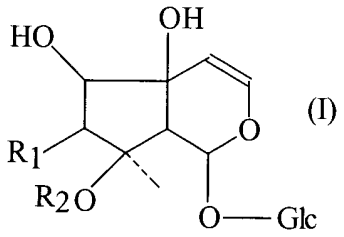
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims have been amended as follows:

1. (Amended) [Use of a compound represented by the following formula (I) as an agent for] A method of treating [prevention and treatment of] arthritis, osteoporosis and ruptured disc comprising administering to a patient in need thereof a pharmaceutically acceptable amount of the compound of formula (I):

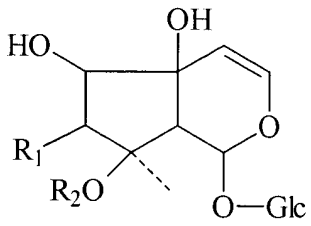


in which

R1 represents a hydrogen atom or an alkyl group; and

R2 represents a hydrogen atom; [or cinnamoyl group] along with a pharmaceutically accpetable adjuvant.

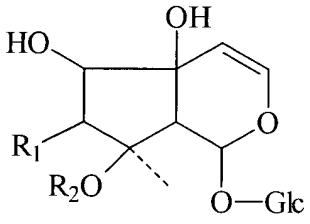
2. (Amended) A pharmaceutical preparation containing as an effective component a compound represented by the following formula (I):



(I)

in which R_1 represents a hydrogen atom or an alkyl group and R_2 represents a hydrogen atom [or cinnamoyl group], in combination with a pharmaceutically acceptable auxiliary, diluent, isotonic agent, preservative, lubricant and solubilizing aid, which is formulated in the form of a pharmaceutically acceptable preparation and has a potent effect for osteoporosis, arthritis and ruptured disc.

3. (Amended) A pharmaceutical preparation containing as an effective component a compound represented by the following formula (I):

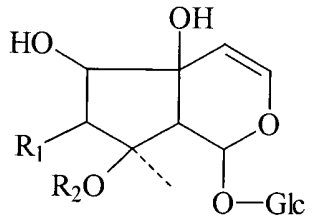


(I)

in which R_1 represents a hydrogen atom or an alkyl group and R_2 represents a hydrogen atom [or cinnamoyl group], and one more materials selected from the group consisting of allendrate, tamoxifen, vitamin D_3, parathyroid hormone (PTH), sulfasalazine, thioredoxin reductase, alendronate, raloxifene, calcitonin, estradiol, genistein, 1,25-dihydroxyvitamin D_3, estrogen receptor

modulator, biphosphonates, shinbarometin [(novel material developed by the present inventors)] and shinbarometin acetate [(novel material developed by the present inventors)], in combination with a pharmaceutically acceptable auxiliary, diluent, isotonic agent, preservative, lubricant and solubilizing aid, which is formulated in the form of a pharmaceutically acceptable preparation and has a potent effect for osteoporosis, arthritis and ruptured disc.

4. (Amended) A process for preparing a compound of formula (I) wherein R_2 is a hydrogen atom, [which has a more potent pharmacological activity,] comprising [characterized in that a] hydrolyzing the compound of formula (I) wherein R_2 is cinnamoyl [is hydrolyzed]:



(I)

in which R_1 represents a hydrogen atom or an alkyl group [and R_2 represents hydrogen atom or cinnamoyl group].